# Science Toolkit: Grade 5 Objective 1.A.1.f

Student Handout: Science: Grade 5 Objective 1.A.1.f

Standard 1.0 Skills and Processes

Topic A. Constructing Knowledge

Indicator 1. Gather and question data from many different forms of scientific investigations which include reviewing appropriate print resources, observing what things are like or what is happening somewhere, collecting specimens for analysis, and doing experiments.

Objective f. Identify possible reasons for differences in results from investigations including unexpected differences in the methods used or in the circumstances in which the investigation is carried out, and sometimes just because of uncertainties in observations.

Selected Response (SR) Item

Question

Use the passage 'Making Fresh Water from Salt Water' to answer the following question.

Five students distilled equal masses of salt water in identical distillation devices. After several hours, the students measured a different amount of fresh water in each of the cups.

What is the best explanation for the different amounts of water in each of the cups?

A. Equal amounts of salt were present in the water.
B. Some of the distillation devices were in the shade.
C. Each student timed the distillation process differently.
D. Each student measured the temperature of the water incorrectly.

Correct Answer

B. Some of the distillation devices were in the shade.

Question

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Handouts

# Making Fresh Water from Salt Water

Although most water on Earth is salt water, humans can only live by drinking fresh water. Fresh water can be produced from salt water by separating the salt from the water.

One method of separating salt from water is distillation. During distillation, salt water is heated until the liquid changes to a vapor, or gas. When the water turns to a vapor, the salt is left behind. When the vapor cools and changes to a liquid, it is fresh water.

The steps for making a simple distillation device are described below:

1. Pour salt water in a bowl.
2. Place an empty cup upright in the middle of the bowl of salt water.
3. Cover the bowl and cup with plastic wrap.
4. Place a small rock on the plastic wrap directly over the cup so the plastic wrap is pushed down slightly.
5. Place the bowl in a sunny location.

The distillation device is pictured below:

Sunlight causes water to evaporate. The vapor collects in droplets on the inside of the plastic wrap and rolls toward the lowest part of the plastic wrap, where the rock pushes it down. The droplets drip into the cup, filling it with fresh water. The salt stays in the bowl.